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Hambor, John E.
Roach, Marsha L.

<120> GROWTH AND DIFFERENTIATION OF STEM CELLS

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<151> 2003-03-31

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PC25028A Seq.ST25.txt

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PC25028A Seq.ST25.txt

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PC25028A Seq.ST25.txt

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          35          40          45

Ala Gly Pro Ala Pro Phe Leu Val Phe Ser Gln Gly Lys Ser Ile Ser
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Arg Ile Asp Pro Asp Gly Thr Asn His Gln Gln Leu Val Val Asp Ala
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Gly Ile Ser Ala Asp Met Asp Ile His Tyr Lys Lys Glu Arg Leu Tyr
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Thr Gly Leu Glu Lys Val Cys Asn Lys Val Ser Gly Leu Ala Ile Asp
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Phe Trp Ser Ser Glu Val Thr Gly Ser Leu His Arg Ala His Leu Lys
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Gly Val Asp Val Lys Thr Leu Leu Glu Thr Gly Gly Ile Ser Val Leu
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Thr Leu Asp Val Leu Asp Lys Arg Leu Phe Trp Val Gln Asp Ser Gly
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PC25028A Seq.ST25.txt

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 His Pro Ser Phe Val Thr Pro Gly Lys Leu Met Val Val His Pro Arg
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 Pro Lys Ser His Ser Ser Ala Cys Ala Glu Gly Tyr Thr Leu Ser Arg
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 Asp Arg Lys Tyr Cys Glu Asp Val Asn Glu Cys Ala Thr Gln Asn His
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 Gly Cys Thr Leu Gly Cys Glu Asn Thr Pro Gly Ser Tyr His Cys Thr
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 385 390 395 400
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 405 410 415
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 420 425 430
 Gly Arg Asp Gly Lys Thr Cys Thr Gly Cys Ser Ser Pro Asp Asn Gly
 435 440 445
 Gly Cys Ser Gln Ile Cys Leu Pro Leu Arg Pro Gly Ser Trp Glu Cys
 450 455 460
 Asp Cys Phe Pro Gly Tyr Asp Leu Gln Ser Asp Arg Lys Ser Cys Ala
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 Ala Ser Gly Pro Gln Pro Leu Leu Leu Phe Ala Asn Ser Gln Asp Ile
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 Arg His Met His Phe Asp Gly Thr Asp Tyr Lys Val Leu Leu Ser Arg
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PC25028A Seq.ST25.txt

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Asp Gly Ser Gln Arg Glu Arg Leu Ile Thr Glu Gly Val Asp Thr Leu
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Glu Gly Leu Ala Leu Asp Trp Ile Gly Arg Arg Ile Tyr Trp Thr Asp
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Ser Gly Lys Ser Val Val Gly Gly Ser Asp Leu Ser Gly Lys His His
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Arg Ile Ile Ile Gln Glu Arg Ile Ser Arg Pro Arg Gly Ile Ala Val
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His Pro Arg Ala Arg Arg Leu Phe Trp Thr Asp Val Gly Met Ser Pro
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Arg Ile Glu Ser Ala Ser Leu Gln Gly Ser Asp Arg Val Leu Ile Ala
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Ser Ser Asn Leu Leu Glu Pro Ser Gly Ile Thr Ile Asp Tyr Leu Thr
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Asp Thr Leu Tyr Trp Cys Asp Thr Lys Arg Ser Val Ile Glu Met Ala
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His Pro Phe Ser Leu Ala Val Phe Glu Asp His Leu Trp Val Ser Asp
690 695 700

Trp Ala Ile Pro Ser Val Ile Arg Val Asn Lys Arg Thr Gly Gln Asn
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Arg Val Arg Leu Gln Gly Ser Met Leu Lys Pro Ser Ser Leu Val Val
725 730 735

Val His Pro Leu Ala Lys Pro Gly Ala Asp Pro Cys Leu Tyr Arg Asn
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Gly Gly Cys Glu His Ile Cys Gln Glu Ser Leu Gly Thr Ala Arg Cys
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Leu Cys Arg Glu Gly Phe Val Lys Ala Trp Asp Gly Lys Met Cys Leu

770

775

Pro Gln Asp Tyr Pro Ile Leu Ser Gly Glu Asn Ala Asp Leu Ser Lys
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Glu Val Thr Ser Leu Ser Asn Ser Thr Gln Ala Glu Val Pro Asp Asp
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Asp Gly Thr Glu Ser Ser Thr Leu Val Ala Glu Ile Met Val Ser Gly
820 825 830

Met Asn Tyr Glu Asp Asp Cys Gly Pro Gly Gly Cys Gly Ser His Ala
835 840 845

Arg Cys Val Ser Asp Gly Glu Thr Ala Glu Cys Gln Cys Leu Lys Gly
850 855 860

Phe Ala Arg Asp Gly Asn Leu Cys Ser Asp Ile Asp Glu Cys Val Leu
865 870 875

Ala Arg Ser Asp Cys Pro Ser Thr Ser Ser Arg Cys Ile Asn Thr Glu
885 890 895

Gly Gly Tyr Val Cys Arg Cys Ser Glu Gly Tyr Glu Gly Asp Gly Ile
900 905 910

Ser Cys Phe Asp Ile Asp Glu Cys Gln Arg Gly Ala His Asn Cys Ala
915 920 925

Glu Asn Ala Ala Cys Thr Asn Thr Glu Gly Gly Tyr Asn Cys Thr Cys
930 935 940

Ala Gly Arg Pro Ser Ser Pro Gly Arg Ser Cys Pro Asp Ser Thr Ala
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Pro Ser Leu Leu Gly Glu Asp Gly His His Leu Asp Arg Asn Ser Tyr
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Pro Gly Cys Pro Ser Ser Tyr Asp Gly Tyr Cys Leu Asn Gly Gly Val
980 985 990

Cys Met His Ile Glu Ser Leu Asp Ser Tyr Thr Cys Asn Cys Val Ile
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Gly Tyr Ser Gly Asp Arg Cys Gln Thr Arg Asp Leu Arg Trp Trp
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Glu Leu Arg His Ala Gly Tyr Gly Gln Lys His Asp Ile Met Val
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PC25028A Seq.ST25.txt

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Pro Pro Lys Asn Pro Cys Asp Glu Pro Ser Gly Ser Val Ser Ser
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Ser Gly Pro Asp Ser Ser Ser Gly Ala Ala Val Ala Ser Cys Pro
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Gln Pro Trp Phe Val Val Leu Glu Lys His Gln Asp Pro Lys Asn
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Gly Ser Leu Pro Ala Asp Gly Thr Asn Gly Ala Val Val Asp Ala
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Gly Leu Ser Pro Ser Leu Gln Leu Gly Ser Val His Leu Thr Ser
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Trp Arg Gln Lys Pro His Ile Asp Gly Met Gly Thr Gly Gln Ser
 1145 1150 1155

Cys Trp Ile Pro Pro Ser Ser Asp Arg Gly Pro Gln Glu Ile Glu
 1160 1165 1170

Gly Asn Ser His Leu Pro Ser Tyr Arg Pro Val Gly Pro Glu Lys
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Pro Asp Leu Pro Arg Gln Thr Glu Pro Val Lys
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PC25028A Seq.ST25.txt

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50          55          60
Asn Thr Ala Asp Gln Cys Ala Asn Arg Cys Thr Arg Asn Lys Gly Leu
65          70          75          80
Pro Phe Thr Cys Lys Ala Phe Val Phe Asp Lys Ala Arg Lys Gln Cys
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Leu Trp Phe Pro Phe Asn Ser Met Ser Ser Gly Val Lys Lys Glu Phe
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Gly His Glu Phe Asp Leu Tyr Glu Asn Lys Asp Tyr Ile Arg Asn Cys
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PC25028A Seq.ST25.txt

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165 170 175

Cys Arg Asn Pro Arg Gly Glu Glu Gly Gly Pro Trp Cys Phe Thr Ser
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Asn Pro Glu Val Arg Tyr Glu Val Cys Asp Ile Pro Gln Cys Ser Glu
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Val Glu Cys Met Thr Cys Asn Gly Glu Ser Tyr Arg Gly Leu Met Asp
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His Thr Glu Ser Gly Lys Ile Cys Gln Arg Trp Asp His Gln Thr Pro
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Asp Asn Tyr Cys Arg Asn Pro Asp Gly Gln Pro Arg Pro Trp Cys Tyr
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Thr Leu Asp Pro His Thr Arg Trp Glu Tyr Cys Ala Ile Lys Thr Cys
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Ala Asp Asn Thr Met Asn Asp Thr Asp Val Pro Leu Glu Thr Thr Glu
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Cys Ile Gln Gly Gln Gly Glu Gly Tyr Arg Gly Thr Val Asn Thr Ile
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His Asp Met Thr Pro Glu Asn Phe Lys Cys Lys Asp Leu Arg Glu Asn
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Tyr Cys Arg Asn Pro Asp Gly Ser Glu Ser Pro Trp Cys Phe Thr Thr
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Met Ser His Gly Gln Asp Cys Tyr Arg Gly Asn Gly Lys Asn Tyr Met

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Lys Asn Met Glu Asp Leu His Arg His Ile Phe Trp Glu Pro Asp Ala
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Ser Lys Leu Asn Glu Asn Tyr Cys Arg Asn Pro Asp Asp Ala His
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Gly Pro Trp Cys Tyr Thr Gly Asn Pro Leu Ile Pro Trp Asp Tyr Cys
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Tyr Arg Asn Lys His Ile Cys Gly Gly Ser Leu Ile Lys Glu Ser Trp
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Val Leu Thr Ala Arg Gln Cys Phe Pro Ser Arg Asp Leu Lys Asp Tyr
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Glu Ala Trp Leu Gly Ile His Asp Val His Gly Arg Gly Asp Glu Lys
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Cys Lys Gln Val Leu Asn Val Ser Gln Leu Val Tyr Gly Pro Glu Gly
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Ser Asp Leu Val Leu Met Lys Leu Ala Arg Pro Ala Val Leu Asp Asp
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Phe Val Ser Thr Ile Asp Leu Pro Asn Tyr Gly Cys Thr Ile Pro Glu
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Lys Thr Ser Cys Ser Val Tyr Gly Trp Gly Tyr Thr Gly Leu Ile Asn
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Tyr Asp Gly Leu Leu Arg Val Ala His Leu Tyr Ile Met Gly Asn Glu
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Lys Cys Ser Gln His His Arg Gly Lys Val Thr Leu Asn Glu Ser Glu
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PC25028A Seq.ST25.txt

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Leu Thr Tyr Lys Val Pro Gln Ser
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<210> 12
 <211> 727
 <212> PRT
 <213> Mus musculus

<400> 12

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 20 25 30

Lys Lys Arg Arg Asn Thr Leu His Glu Phe Lys Lys Ser Ala Lys Thr
 35 40 45

Thr Leu Thr Lys Glu Asp Pro Leu Leu Lys Ile Lys Thr Lys Lys Val
 50 55 60

Asn Ser Ala Asp Glu Cys Ala Asn Arg Cys Ile Arg Asn Arg Gly Phe
 65 70 75 80

Thr Phe Thr Cys Lys Ala Phe Val Phe Asp Lys Ser Arg Lys Arg Cys
 85 90 95

Tyr Trp Tyr Pro Phe Asn Ser Met Ser Ser Gly Val Lys Lys Gly Phe
 100 105 110

PC25028A Seq.ST25.txt

Gly His Glu Phe Asp Leu Tyr Glu Asn Lys Asp Tyr Ile Arg Asn Cys
115 120 125

Ile Ile Gly Lys Gly Gly Ser Tyr Lys Gly Thr Val Ser Ile Thr Lys
130 135 140

Ser Gly Ile Lys Cys Gln Pro Trp Asn Ser Met Ile Pro His Glu His
145 150 155 160

Ser Phe Leu Pro Ser Ser Tyr Arg Gly Lys Asp Leu Gln Glu Asn Tyr
165 170 175

Cys Arg Asn Pro Arg Gly Glu Glu Gly Gly Pro Trp Cys Phe Thr Ser
180 185 190

Asn Pro Glu Val Arg Tyr Glu Val Cys Asp Ile Pro Gln Cys Ser Glu
195 200 205

Val Glu Cys Met Thr Cys Asn Gly Glu Ser Tyr Arg Gly Pro Met Asp
210 215 220

His Thr Glu Ser Gly Lys Thr Cys Gln Arg Trp Asp Gln Gln Thr Pro
225 230 235 240

His Arg His Lys Phe Leu Pro Glu Arg Tyr Pro Asp Lys Gly Phe Asp
245 250 255

Asp Asn Tyr Cys Arg Asn Pro Asp Gly Lys Pro Arg Pro Trp Cys Tyr
260 265 270

Thr Leu Asp Pro Asp Thr Pro Trp Glu Tyr Cys Ala Ile Lys Thr Cys
275 280 285

Ala His Ser Ala Val Asn Glu Thr Asp Val Pro Met Glu Thr Thr Glu
290 295 300

Cys Ile Gln Gly Gln Gly Glu Gly Tyr Arg Gly Thr Ser Asn Thr Ile
305 310 315 320

Trp Asn Gly Ile Pro Cys Gln Arg Trp Asp Ser Gln Tyr Pro His Lys
325 330 335

His Asp Ile Thr Pro Glu Asn Phe Lys Cys Lys Asp Leu Arg Glu Asn
340 345 350

Tyr Cys Arg Asn Pro Asp Gly Ala Glu Ser Pro Trp Cys Phe Thr Thr
355 360 365

Asp Pro Asn Ile Arg Val Gly Tyr Cys Ser Gln Ile Pro Lys Cys Asp

370

375

Val Ser Ser Gly Gln Asp Cys Tyr Arg Gly Asn Gly Lys Asn Tyr Met
385 390 395 400

Gly Asn Leu Ser Lys Thr Arg Ser Gly Leu Thr Cys Ser Met Trp Asp
405 410 415

Lys Asn Met Glu Asp Leu His Arg His Ile Phe Trp Glu Pro Asp Ala
420 425 430

Ser Lys Leu Asn Lys Asn Tyr Cys Arg Asn Pro Asp Asp Ala His
435 440 445

Gly Pro Trp Cys Tyr Thr Gly Asn Pro Leu Ile Pro Trp Asp Tyr Cys
450 455 460

Pro Ile Ser Arg Cys Glu Gly Asp Thr Thr Pro Thr Ile Val Asn Leu
465 470 475

Asp His Pro Val Ile Ser Cys Ala Lys Thr Lys Gln Leu Arg Val Val
485 490 495

Asn Gly Ile Pro Thr Gln Thr Thr Val Gly Trp Met Val Ser Leu Lys
500 505 510

Tyr Arg Asn Lys His Ile Cys Gly Gly Ser Leu Ile Lys Glu Ser Trp
515 520 525

Val Leu Thr Ala Arg Gln Cys Phe Pro Ala Arg Asn Lys Asp Leu Lys
530 535 540

Asp Tyr Glu Ala Trp Leu Gly Ile His Asp Val His Glu Arg Gly Glu
545 550 555 560

Glu Lys Arg Lys Gln Ile Leu Asn Ile Ser Gln Leu Val Tyr Gly Pro
565 570 575

Glu Gly Ser Asp Leu Val Leu Leu Lys Leu Ala Arg Pro Ala Ile Leu
580 585 590

Asp Asn Phe Val Ser Thr Ile Asp Leu Pro Ser Tyr Gly Cys Thr Ile
595 600 605

Pro Glu Lys Thr Thr Cys Ser Ile Tyr Gly Trp Gly Tyr Thr Gly Leu
610 615 620

Ile Asn Ala Asp Gly Leu Leu Arg Val Ala His Leu Tyr Ile Met Gly
625 630 635 640

PC25028A Seq.ST25.txt

Asn Glu Lys Cys Ser Gln His His Gln Gly Lys Val Thr Leu Asn Glu
645 650 655

Ser Glu Leu Cys Ala Gly Ala Glu Lys Ile Gly Ser Gly Pro Cys Glu
660 665 670

Gly Asp Tyr Gly Gly Pro Leu Ile Cys Glu Gln His Lys Met Arg Met
675 680 685

Val Leu Gly Val Ile Val Pro Gly Arg Gly Cys Ala Ile Pro Asn Arg
690 695 700

Pro Gly Ile Phe Val Arg Val Ala Tyr Tyr Ala Lys Trp Ile His Lys
705 710 715 720

Val Ile Leu Thr Tyr Lys Leu
725

<210> 13
<211> 618
<212> DNA
<213> Homo sapiens

<400> 13
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cggagagacg cggccgcctc ggcctcgacg ccagcccagg cgccgacctc cgattctcct 180
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gaactgggcc gccacagctg ggctgtcctc cacaccctgg ccgcctacta ccccgacctg 360
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ccctgtgagg agtgtgctga agacctaga aaaagggttg gcaggaacca cccagacacc 480
cgcacccggg catgcttcac acagtggctg tgccacctgc acaatgaagt gaaccgagag 540
ctgggcaagc ctgacttcga ctgctcaaaa gtggatgagc gctggcgcgga cggctggaag 600
gatggctcct gtgactag 618

<210> 14
<211> 275
<212> PRT
<213> Homo sapiens

<400> 14

Met Ile Ser Thr Ser Trp Gly Ala Pro Lys Ala Phe Ser Lys Gly Phe
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Asn Leu Gln His Val Ala Asp Gly Leu Tyr Gly Ser His Leu His Val
20 25 30

PC25028A Seq.ST25.txt

Tyr Ser Trp Pro Gly Gly Glu Ile Lys Gln Leu Ile Asp Leu Gly Pro
 35 40 45
 Thr Gly Leu Leu Pro Leu Glu Ile Arg Phe Leu His Asp Pro Ser Lys
 50 55 60
 Asp Thr Gly Phe Val Gly Ser Ala Leu Ser Ser Asn Met Ile Arg Phe
 65 70 75 80
 Phe Lys Asn Ser Asp Glu Thr Trp Ser His Glu Val Val Ile Ser Val
 85 90 95
 Lys Pro Leu Lys Val Glu Asn Trp Ile Leu Pro Glu Met Pro Gly Leu
 100 105 110
 Ile Thr Asp Phe Leu Ile Ser Leu Asp Asp Arg Phe Ile Tyr Phe Val
 115 120 125
 Asn Trp Leu His Gly Asp Ile Arg Gln Tyr Asn Ile Glu Asp Pro Lys
 130 135 140
 Asn Pro Val Leu Thr Gly Gln Ile Trp Val Gly Gly Leu Leu Gln Lys
 145 150 155 160
 Gly Ser Pro Val Lys Ala Val Gly Glu Asp Gly Asn Thr Phe Gln Phe
 165 170 175
 Glu Val Pro Gln Ile Lys Gly Lys Ser Leu Arg Gly Gly Pro Gln Met
 180 185 190
 Ile Gln Leu Ser Leu Asp Gly Lys Arg Leu Tyr Ala Thr Asn Ser Leu
 195 200 205
 Phe Ser Ala Trp Asp Arg Gln Phe Tyr Pro Glu Ile Met Glu Lys Gly
 210 215 220
 Ser His Ile Ile Gln Ile Asp Val Asp Thr Glu Lys Gly Gly Leu Thr
 225 230 235 240
 Ile Asn Pro Asp Phe Phe Val Asp Phe Gly Asp Glu Pro Asp Gly Pro
 245 250 255
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 260 265 270
 Ile Trp Ile
 275

<210> 15
 <211> 559

PC25028A Seq.ST25.txt

<212> DNA
<213> Mus musculus

<400> 15
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tagggaggac tgtccgcagg atcgggaaga attgggtcgc cacacctggg ctttcctcca 180
tacgctggcc gcctattacc cggacaggcc caccgccagaa caacaacagg atatggccca 240
gttcatacat atattttcca agttttaccc ctgcgaggaa tgtgcggaag acataaggaa 300
gaggataggc aggaaccagc cagacacaag cactcgagta tccttcagcc agtggctgtg 360
ccgcctgcac aatgaggtga atcgggaagct gggcaagcct gattttgact gctcgagagt 420
agatgagcgt tggcgtgacg gatggaagga cggctcctgt gactagaaga ttaccagcag 480
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tctgagccaa cacttgttt 559

<210> 16
<211> 125
<212> PRT
<213> Mus musculus

<400> 16

Met Arg Thr Gln Gln Lys Arg Asp Ile Lys Phe Arg Glu Asp Cys Pro
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Gln Asp Arg Glu Glu Leu Gly Arg His Thr Trp Ala Phe Leu His Thr
20 25 30
Leu Ala Ala Tyr Tyr Pro Asp Arg Pro Thr Pro Glu Gln Gln Gln Asp
35 40 45
Met Ala Gln Phe Ile His Ile Phe Ser Lys Phe Tyr Pro Cys Glu Glu
50 55 60
Cys Ala Glu Asp Ile Arg Lys Arg Ile Gly Arg Asn Gln Pro Asp Thr
65 70 75 80
Ser Thr Arg Val Ser Phe Ser Gln Trp Leu Cys Arg Leu His Asn Glu
85 90 95
Val Asn Arg Lys Leu Gly Lys Pro Asp Phe Asp Cys Ser Arg Val Asp
100 105 110
Glu Arg Trp Arg Asp Gly Trp Lys Asp Gly Ser Cys Asp
115 120 125

<210> 17
<211> 600
<212> DNA

<213> Mus musculus

<400> 17

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aggcatagag acgacaccac cccttccgcg gccccggcgc cgcaagggtt ggagcacggg      180
aagcgaccgt gccggggcctg cgtggacttc aagtcgtgga tgcggacca gcagaagcgg      240
gacatcaagt ttagggagga ctgtccgcag gatcggaag aattgggtcg ccacacctgg      300
gctttcctcc atacgctggc cgcctattac ccggacaggc ccacgccaga acaacaacag      360
gatatggccc agttcataca tatattttcc aagttttacc cctgcgagga atgtgcggaa      420
gacataagga agaggatagg caggaaccag ccagacacaa gcactcgagt atccttcagc      480
cagtggctgt gccgcctgca caatgaggtg aatcggaagc tgggcaagcc tgattttgac      540
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<210> 18

<211> 198

<212> PRT

<213> Mus musculus

<400> 18

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Met Ala Ala Pro Ser Glu Pro Ala Gly Phe Pro Arg Gly Ser Arg Phe
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Ser Phe Leu Pro Gly Gly Ala Arg Ser Glu Met Thr Asp Asp Leu Val
          20           25           30

Thr Asp Ala Arg Gly Arg Gly Ala Arg His Arg Asp Asp Thr Thr Pro
          35           40           45

Ser Ala Ala Pro Ala Pro Gln Gly Leu Glu His Gly Lys Arg Pro Cys
          50           55           60

Arg Ala Cys Val Asp Phe Lys Ser Trp Met Arg Thr Gln Gln Lys Arg
65           70           75           80

Asp Ile Lys Phe Arg Glu Asp Cys Pro Gln Asp Arg Glu Glu Leu Gly
          85           90           95

Arg His Thr Trp Ala Phe Leu His Thr Leu Ala Ala Tyr Tyr Pro Asp
          100          105          110

Arg Pro Thr Pro Glu Gln Gln Gln Asp Met Ala Gln Phe Ile His Ile
          115          120          125

Phe Ser Lys Phe Tyr Pro Cys Glu Glu Cys Ala Glu Asp Ile Arg Lys
          130          135          140

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PC25028A Seq.ST25.txt

Arg Ile Gly Arg Asn Gln Pro Asp Thr Ser Thr Arg Val Ser Phe Ser
145 150 155 160

Gln Trp Leu Cys Arg Leu His Asn Glu Val Asn Arg Lys Leu Gly Lys
165 170 175

Pro Asp Phe Asp Cys Ser Arg Val Asp Glu Arg Trp Arg Asp Gly Trp
180 185 190

Lys Asp Gly Ser Cys Asp
195

<210> 19 -
<211> 1869
<212> DNA
<213> Homo sapiens

<400> 19
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gtgtttctga aggggaggtc acagcctgag ctggcctcct atgcctcatc atgtcccaaa 1260
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PC25028A Seq.ST25.txt

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gtaagggtgga tattaataat ctgtaatca ggacaggtgg tgcaaatggc gctgggaggt 1560
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<210> 20
 <211> 252
 <212> PRT
 <213> Homo sapiens

<400> 20

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Met Gly Val Leu Leu Thr Gln Arg Thr Leu Leu Ser Leu Val Leu Ala
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Leu Leu Phe Pro Ser Met Ala Ser Met Ala Ala Ile Gly Ser Cys Ser
20      25      30

Lys Glu Tyr Arg Val Leu Leu Gly Gln Leu Gln Lys Gln Thr Asp Leu
35      40      45

Met Gln Asp Thr Ser Arg Leu Leu Asp Pro Tyr Ile Arg Ile Gln Gly
50      55      60

Leu Asp Val Pro Lys Leu Arg Glu His Cys Arg Glu Arg Pro Gly Ala
65      70      75      80

Phe Pro Ser Glu Glu Thr Leu Arg Gly Leu Gly Arg Arg Gly Phe Leu
85      90      95

Gln Thr Leu Asn Ala Thr Leu Gly Cys Val Leu His Arg Leu Ala Asp
100     105     110

Leu Glu Gln Arg Leu Pro Lys Ala Gln Asp Leu Glu Arg Ser Gly Leu
115     120     125

Asn Ile Glu Asp Leu Glu Lys Leu Gln Met Ala Arg Pro Asn Ile Leu
130     135     140

Gly Leu Arg Asn Asn Ile Tyr Cys Met Ala Gln Leu Leu Asp Asn Ser
145     150     155     160

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PC25028A Seq.ST25.txt

Asp Thr Ala Glu Pro Thr Lys Ala Gly Arg Gly Ala Ser Gln Pro Pro
165 170 175

Thr Pro Thr Pro Ala Ser Asp Ala Phe Gln Arg Lys Leu Glu Gly Cys
180 185 190

Arg Phe Leu His Gly Tyr His Arg Phe Met His Ser Val Gly Arg Val
195 200 205

Phe Ser Lys Trp Gly Glu Ser Pro Asn Arg Ser Arg Arg His Ser Pro
210 215 220

His Gln Ala Leu Arg Lys Gly Val Arg Arg Thr Arg Pro Ser Arg Lys
225 230 235 240

Gly Lys Arg Leu Met Thr Arg Gly Gln Leu Pro Arg
245 250

<210> 21
<211> 1848
<212> DNA
<213> Mus musculus

<400> 21
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gctgctccaa ctcttcctct cagctcctca gccagctgca gaatcaggcg aacctcacgg 180
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PC25028A Seq.ST25.txt

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<210> 22
 <211> 263
 <212> PRT
 <213> Mus musculus

<400> 22

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Leu Ile Leu Ser Met Ala Leu Ala Asn Arg Gly Cys Ser Asn Ser Ser
20     25     30
Ser Gln Leu Leu Ser Gln Leu Gln Asn Gln Ala Asn Leu Thr Gly Asn
35     40     45
Thr Glu Ser Leu Leu Glu Pro Tyr Ile Arg Leu Gln Asn Leu Asn Thr
50     55     60
Pro Asp Leu Arg Ala Ala Cys Thr Gln His Ser Val Ala Phe Pro Ser
65     70     75     80
Glu Asp Thr Leu Arg Gln Leu Ser Lys Pro His Phe Leu Ser Thr Val
85     90     95
Tyr Thr Thr Leu Asp Arg Val Leu Tyr Gln Leu Asp Ala Leu Arg Gln
100    105    110
Lys Phe Leu Lys Thr Pro Ala Phe Pro Lys Leu Asp Ser Ala Arg His
115    120    125
Asn Ile Leu Gly Ile Arg Asn Asn Val Phe Cys Met Ala Arg Leu Leu
130    135    140

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PC25028A Seq.ST25.txt

Asn His Ser Leu Glu Ile Pro Glu Pro Thr Gln Thr Asp Ser Gly Ala
 145 150 155 160

Ser Arg Ser Thr Thr Thr Pro Asp Val Phe Asn Thr Lys Ile Gly Ser
 165 170 175

Cys Gly Phe Leu Trp Gly Tyr His Arg Phe Met Gly Ser Val Gly Arg
 180 185 190

Val Phe Arg Glu Trp Asp Asp Gly Ser Thr Arg Ser Arg Arg Gln Ser
 195 200 205

Pro Leu Arg Ala Arg Arg Lys Gly Thr Arg Arg Ile Arg Val Arg His
 210 215 220

Lys Gly Thr Arg Arg Ile Arg Val Arg Arg Lys Gly Thr Arg Arg Ile
 225 230 235 240

Trp Val Arg Arg Lys Gly Ser Arg Lys Ile Arg Pro Ser Arg Ser Thr
 245 250 255

Gln Ser Pro Thr Thr Arg Ala
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<210> 23
 <211> 33
 <212> DNA
 <213> Mus musculus

<400> 23
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33

<210> 24
 <211> 31
 <212> DNA
 <213> Mus musculus

<400> 24
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31

<210> 25
 <211> 32
 <212> DNA
 <213> Mus musculus

<400> 25
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32

<210> 26
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 <212> DNA
 <213> Mus musculus

<400> 26

PC25028A Seq.ST25.txt

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agggccacgc cagaacaaca acaggatatg gcccagttca tacatatatt ttccaagttt	180
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acaagcactc gagtatcctt cagccagtgg ctgtgccgcc tgcacaatga ggtgaatcgg	300
aagctgggca agcctgattt tgactgctcg agagtagatg agcgttggcg tgacggatgg	360
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ccgc	424

<210> 27
 <211> 22
 <212> DNA
 <213> Mus musculus

<400> 27	
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<210> 28
 <211> 21
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<400> 28	
aactctcggc aggttctgga a	21

<210> 29
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